

## CLAIMS

1. A method for phase noise suppression in a receiver section of an OFDM based WLAN operating in accordance with IEEE standard 802.11a, comprising:  
estimating ICI plus noise from the null subcarrier set  $S_N$  extracted from the OFDM signal, and estimating CPE from the pilot subcarrier set  $S_P$  extracted from the OFDM signal; and  
applying the said estimates in MMSE equalization and data detection of the data subcarrier set  $S_D$ .
2. A method in accordance with claim 1, wherein the data stream from RF down conversion and A/D conversion of the OFDM signal is fed as parallel streams for FFT, both CPE and ICI being present at the output of FFT due to phase noise, and said estimates being obtained from said FFT output.
3. A method in accordance with claim 2, wherein the said pilot subcarrier set  $S_P$  is taken from MMSE equalization as a first decision and fed back for further CPE estimation to thereby further improve the CPE estimate which proceeds for MMSE equalization and data detection.
4. A method in accordance with claim 3, wherein said estimates are used to calculate the equalizer coefficients for N samples of each transmitted symbol of the OFDM signal.
5. A method in accordance with claim 4, wherein the unknown parameters in the equalizer coefficients are replaced by the said estimated values.
6. A method wherein all transmitted symbols are subjected to said method.